

IN THE CLAIMS:

The following is a complete listing of claims in this application.

1. (previously presented) Process for the manufacture of a work hardened product made of a high mechanical strength Al-Zn-Mg-Cu aluminum alloy comprising:

- casting an ingot made of an alloy with composition (% by weight) Zn=7.0-11.0, Mg=1.8-3.0; Cu=1.2-2.6, at least one of the elements Mn (0.05-0.4), Cr (0.05-0.3), Zr (0.05-0.20), Hf (0.05-0.5), V (0.05-0.3), Ti (0.01-0.2) and Sc (0.05-0.3), the remainder being made of aluminum and inevitable impurities,

- optionally homogenizing said ingot,
- hot transforming said ingot by rolling, extrusion or forging,

- solution heat treating said optionally homogenized ingot and quenching of the product obtained,

- optionally controlled stretching of the quenched product with a permanent set between 1 and 5%, and

- artificially aging the quenched and optionally stretched product at a temperature and with a duration equivalent to about 100-230 hours at 120°C, sufficient to maximize compression yield strength in the L direction.

2. (previously presented) Process according to claim 1, wherein the alloy contains magnesium between 1.8 and 2.4%.

3. (previously presented) Process according to claim 1, wherein the alloy contains copper between 1.6 and 2.2%.

4. (previously presented) Process according to claim 1, wherein the alloy contains magnesium between 1.8 and 2.4%, and copper between 1.6 and 2.2%.

5. (previously presented) Process according to claim 1, wherein the alloy is a 7349 or 7449 aluminum alloy.

6. (previously presented) Process according to claim 1, wherein the alloy is a 7055 aluminum alloy.

7. (previously presented) Process for the manufacture of a work hardened product made of a high mechanical strength Al-Zn-Mg-Cu aluminum alloy comprising:

- casting an ingot made of an alloy with composition (% by weight) Zn=7.0-11.0, Mg=1.8-3.0, Cu=1.2-2.6, at least one of the elements Mn (0.05-0.4), Cr (0.05-0.3), Zr (0.05-0.20), Hf (0.05-0.5), V (0.05-0.3), Ti (0.01-0.2) and Sc (0.05-0.3), the remainder being made of aluminum and inevitable impurities,

- optionally homogenizing said ingot,
- hot transforming said ingot by rolling, extrusion or forging,

- solution heat treating the transformed ingot and quenching the resulting product,

- optionally controlled stretching of the quenched product with a permanent set between 1 and 5%,

- single step artificially aging the optionally stretched product at a temperature and with a duration included within a parallelogram AEFG, having vertices with the following coordinates in a temperature-duration diagram:

A: 120°C-100 h B: 145°C-9 h C: 145°C-22 h D: 120°C-230 h.  
Claim 8 (canceled).

9. (previously presented) Process according to claim 1, wherein the artificial aging time equivalent at 120°C is between 100 and 250 h.

10. (previously presented) Process according to claim 1, wherein the artificial aging time equivalent at 120°C is 50 to 200 h longer than the time corresponding to temper T651.

11. (previously presented) Process according to claim 1, wherein said artificial aging is a two-step aging comprising a

first step at a temperature between 80°C and 120°C, and a second step at a temperature between 120°C and 160°C, and wherein the artificial aging time equivalent at 120°C is between 100 and 250 h.

12. (previously presented) Process according to claim 1, wherein said artificial aging is a three-step aging comprising a first step at a temperature between 80°C and 120°C, a second step at a temperature between 120°C and 160°C, and a third step at a lower temperature than the second step and between 100°C and 140°C, and wherein the artificial aging time equivalent at 120°C is between 100 and 250 h.

Claims 13-24 (canceled).

25. (new) Process according to claim 1, wherein the alloy contains magnesium between 2.15 and 3.0%.

26. (new) Process according to claim 1, wherein the alloy is artificially aged to a metallurgical temper between T6 and T79.

27. (new) Process according to claim 1, wherein the alloy is artificially aged to a metallurgical temper between T651 and T7951.

28. (new) Process according to claim 7, wherein the alloy contains magnesium between 2.15 and 3.0%.

29. (new) Process according to claim 7, wherein the alloy is artificially aged to a metallurgical temper between T6 and T79.

30. (new) Process according to claim 7, wherein the alloy is artificially aged to a metallurgical temper between T651 and T7951.